

REMARKS

With the above amendments, claims 1-7, 9-16, and 18-26 remain in the application and stand rejected. Independent claims 1, 13, 16, 21 and 24 have been amended to claim embodiments of the present invention relating to droplet sensing in an integrated circuit manufacturing equipment. The limitation "integrated circuit manufacturing equipment" was present in dependent claims 8 and 17 as originally filed. Therefore, it is respectfully submitted that the aforementioned claim amendments do not present new claim limitations for examination and will not require a new search.

The limitation "integrated circuit manufacturing equipment" of claims 8 and 17 have been added to their base claims. Accordingly, claims 8 and 17 have been cancelled.

No new matter has been added.

Substance Of Examiner Interview

A telephone interview between Mr. Patrick Benedicto and the Examiner was conducted on April 7, 2003. The interview did not involve any exhibits. In the interview, U.S. 3,852,768 to Carmichael et al. ("Carmichael"), U.S. 4,922,268 to Osborne ("Osborne"), and U.S. 2003/0011663A1 ("Sarmast") were discussed in view of claims 6, 8, 11, and 17. In particular, Mr. Benedicto has not been able to find a wafer, integrated circuit manufacturing equipment, or anything related to integrated circuit fabrication in any of the aforementioned references cited in the last office action. Claims 6, 8, 11, and 17 recite features of the present invention relating to integrated circuit fabrication. The Examiner told Mr. Benedicto to submit an amendment explaining why the aforementioned references are not related to integrated circuit fabrication for reconsideration.

In the interview, Mr. Benedicto also inquired about the requirement to submit a new oath or declaration. Mr. Benedicto informed the Examiner that he believes the original declaration does not need to provide an application number and filing date because it was filed with the application. The Examiner told Mr. Benedicto to so indicate in an amendment for reconsideration.

No agreement was reached.

Oath/Declaration

In the last office action, the declaration was deemed defective because it does not provide an application number and filing date. It is respectfully submitted that the originally filed declaration does not need an application number and filing date because it was filed with the application. The originally filed declaration provides the names of the inventors and a reference to an attached specification, which was attached to the declaration at the time of execution and submitted with the declaration on filing. See MPEP § 606 on page 600-29. Therefore, it is respectfully submitted that the declaration is proper.

Claim Rejections

In the last office action, independent claims 1, 13, 16, 21, and 24 were rejected under 35 U.S.C. 102(b) as being anticipated by Carmichael.

Claim 1 is patentable over Carmichael at least for reciting: "an apparatus for sensing a characteristic of a droplet in an integrated circuit manufacturing equipment." Carmichael does not anticipate claim 1 because Carmichael does not disclose or suggest sensing a droplet characteristic in an integrated circuit manufacturing equipment. For example, element 6 shown in Figure 1 of Carmichael is a piece of paper, not a wafer as recited in originally filed claim 6. See Carmichael, col. 2, lines 25-27. That is, Carmichael concerns paper printing, not integrated circuit fabrication. Therefore, claim 1 is patentable over Carmichael. For at least the same reasons, claims 13, 16, 21, and 24 are also patentable over Carmichael.

In the last office action, independent claims 1, 13, 16, 21, and 24 were rejected under 35 U.S.C. § 102(e) as being anticipated by Sarmast.

Claim 1 is patentable over Sarmast for at least reciting: "an apparatus for sensing a characteristic of a droplet in an integrated circuit manufacturing equipment." Like Carmichael, Sarmast concerns paper printing and not integrated circuit fabrication. For example, print media 166 shown in Figure 6 of Sarmast cannot be a wafer as recited in originally filed claim 6 because Sarmast does not disclose or suggest anything related to

integrated circuit fabrication. As another example, processor 102 shown in Figure 4 of Sarmast is not an integrated circuit manufacturing equipment as previously recited in now cancelled claim 8. Therefore, claim 1 is patentable over Sarmast. For at least the same reasons, claims 13, 16, 21, and 24 are also patentable over Sarmast.

Osborne, like Carmichael and Sarmast, concerns paper printing and not integrated circuit fabrication. For example, Osborne does not disclose or suggest a wafer processing chamber as recited in originally filed claim 11.

It is to be noted that paper printing is very different from integrated circuit fabrication. An apparatus for sensing droplet characteristics in an integrated circuit manufacturing equipment and accompanying benefits are taught in the present application, not in Carmichael, Sarmast, Osborne or their combinations. For example, the present application discloses how a droplet sensor may be used to calibrate nozzles in an integrated circuit manufacturing equipment to achieve film uniformity on a wafer. The aforementioned cited references do not teach or suggest calibration of nozzles to achieve drop uniformity, let alone achieving film uniformity in an integrated circuit fabrication process.

Dependent Claims

Dependent claims 2-7, 9-12, 14-15, 18-20, 22-23, and 25-26 are patentable over Carmichael, Sarmast, Osborne or their combination at least for the same reasons that independent claims 1, 13, 16, 21, and 24 are patentable.

Conclusion

For at least the above reasons, it is respectfully submitted that claims 1-7, 9-16, and 18-26 are in condition for allowance. If the next communication is other than a Notice Of Allowance, the Examiner is invited to telephone the undersigned at (408)436-2112.

If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 50-2427.

Docket No. 10001.001500
Response To Office Action
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Respectfully submitted,
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